

# Early Life Experiences and Adult Sports Participation

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*This paper examines the influence of some childhood background factors on adult levels of participation in hunting and fishing activities. The study, based on data collected from hunters and fishermen in Pennsylvania, offers some insights into the effect early experiences with two types of outdoor recreational activities have on participation in adult life. The data show that residence in youth and source of introduction to hunting and fishing, although significantly related to extent of participation as a youth, are not related to higher levels of adult participation. However, for hunters, and to a limited extent for fishermen, frequency of participation as a youth is positively related to current level of participation. It is suggested that intervening factors occurring in the time interval between youth and adulthood serve to reduce or eliminate the influence of childhood residence and source of introduction, and that at different points of the life and work cycles certain variables recede and others emerge as influences on participation. Work-related influences on level of adult participation are presented as one such "intervening" variable.*

**KEYWORDS:** PARTICIPATION, HUNTING, FISHING, OUTDOOR RECREATION, SOCIALIZATION, CHILDHOOD RESIDENCE, CHILDHOOD PARTICIPATION, INTERVENING VARIABLE

## Introduction

A central endeavor of social research is the analysis of determinants of and constraints on behavior patterns. One of the more salient features of social life about which much has been written, and little resolved, has been that of participation. To this end a considerable amount of research has been directed. Studies have undertaken the task of determining conditions of joining and not joining, participation and nonparticipation, the scope of activities in which individuals take part, and the scale of participation (Axelrod, 1956; Hagedorn and Labovitz, 1967; Harry, 1970; Tomeh, 1967). In part, this interest

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has been a result of changes occurring in society, especially those changes leading to increased leisure time. Changes in income, amount and scheduling of work, and increased urbanization have generated an interest in the potential increase in demand for recreation facilities and a concern for effective use of free time (Clawson and Knetsch, 1963; Neumeyer, 1958; Shafer, 1968; Wippler, 1970).

Prior research on leisure participation has exhibited several trends. First, there has been little differentiation with regard to types of participation. Populations were studied with respect to participation in general, and descriptive breakdowns were provided to show who participated in which activities. Second, there has been a considerable amount of research treating personal and social characteristics such as age, sex, marital status, stage of life cycle, income, residence, and education as determinants of participation (Jordan, 1963; Shafer, 1965; Spaulding, 1970). As Smith (1966: 249) has indicated, though, approaching participation by way of social and personal characteristics represent progress but is an "inadequate and unsatisfactory stopping point." And, third, present and past situational determinants of recreation participation have been largely ignored.<sup>1</sup>

In this paper our research focuses on two specific outdoor activities: hunting and fishing. The concern is not with establishing the fact of participation but with examining the relation of some early-life experiences to current level of adult participation in these sports.

### **Theoretical Framework**

Our theoretical focus is guided by the social scientist's recognition that much of what occurs in adult life stems from participation in social forms and institutions during childhood and from the transmission of values and attitudes of parents and other groups in which individuals are members (Broom and Selznick, 1970: 84). The internalization of these early experiences has been termed socialization. Socializing experiences, or conditions of previous experience, are felt to be important to recreation because they are factors in an individual's background which may predispose him toward certain future action. The suggestion here is that, as in other areas of daily life, early orientations toward sports may persist into adult life, influencing both the types of recreation one chooses to participate in and the extent of his participation. For our sample of hunters and fishermen, we operationalize the above socializing influences in terms of three childhood antecedents: residence during youth, source of introduction to sports, and frequency of participation during youth.<sup>2</sup>

1. For an exception see the recent research effort by Witt and Bishop (1970), where an attempt is made at linking antecedent situational factors with types of leisure activities.

2. Hendee (1969) discusses some of the relationships we are suggesting. Regarding rural residence and sports participation, he says, "hunting appeals to rural residents and blue collar workers. It could be argued that this is a function of differential rates of socialization into this activity in urban and rural places. The values reflected in hunting may have been most pervasive in the rural population, but are being diminished as rural young adults who have been interested in hunting migrate to urban places. . . ." (Hendee 1969: 337).

By way of elaboration on the above influences, one might argue that hunting and fishing are rural sports into which youths are introduced at an early age and are participated in more frequently by rural youth. With the increased urbanization that has occurred over the past few decades and the accompanying migration from rural to urban areas, hunting and fishing may diminish in importance and in the future lose some of their appeal to urban youth, if the effect of rural background during youth is, in fact, important to adult participation (Hendee, 1969; Copp, 1964). Similarly, being introduced to hunting and fishing by one's parents may be important for participation during youth as well as for participation later in life. Finally, lack of previous experience, that is, nonparticipation during youth, may represent a potential constraint on participation in these two types of outdoor recreation. It seems to us that the constraint of inexperience is especially worthy of study since many of the changes occurring in society seem to work against predisposing youngsters to hunting and fishing. This may, in turn, restrict the expansion of hunting and fishing activities. Hopefully, the research will provide some insight into these sorts of relationships and into the long-term effects of socialization and previous experiences on participation in outdoor recreation.

A model depicting the relationships we have suggested between early-life experiences and adult sports participation is presented in Figure 1. The directional arrows indicate the relationships to be examined. The specific hypotheses to be tested in the research are as follows:

- H.1 Controlling for degree of participation during youth, both residence in youth and source of introduction to sport are related to current level of participation.
- H.2 Controlling for residence during youth and source of introduction to sport (separately), degree of participation in youth is related to current level of participation.
- H.3 Both residence during youth and source of introduction to sport are related to participation during youth.
- H.4 Residence during youth is related to source of introduction to sport.

### Procedures

Names of individuals furnishing information in the study were randomly drawn from 1966 listings in the Miscellaneous License Division of the Pennsylvania Department of Revenue. The population consisted of all persons

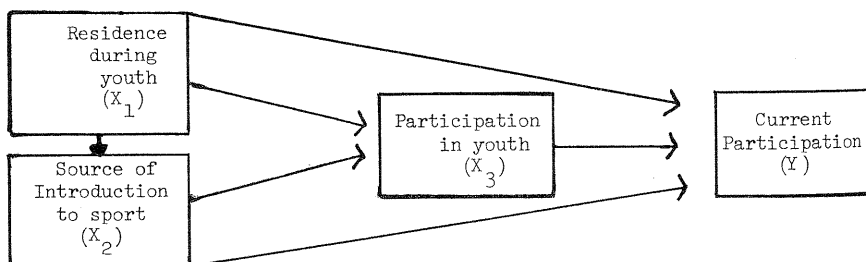


FIGURE 1. BACKGROUND FACTORS EXAMINED AGAINST CURRENT LEVELS OF HUNTING AND FISHING PARTICIPATION.

who purchased a hunting and/or fishing license in 1965. The sampling design was intended to obtain a proportionate representation of hunters and fishermen by stratifying license type and county of purchase. As a result, hunters comprised a larger portion (66.3 percent) of the sample than did fishermen (33.7 percent), and the counties with larger numbers of license sales made up a proportionately larger part of the sample. In those counties having relatively few sales, at least one hunter and one fisherman were included.

Information from those sampled was obtained by means of a mailed questionnaire. Of the initial sample of 1000, completed questionnaires were returned by 318 hunters, 116 fishermen, and 338 sportsmen who had both hunting and fishing licenses, for a response level of 77 percent. A high percentage of all license holders were Pennsylvania residents.

With the exception of the adult participation variable, the variables used in the study were measured in a straightforward manner. The measure of current level of participation used in the study (referred to in the tables as *participation score*) was constructed by summing the number of times each sportsman reported he went hunting or fishing for various species of game during the year preceding the study. For hunters the participation score included trips for both large and small game, and for fishermen it included trips for both salt- and fresh-water fish. While we recognize obvious differences among trips for different species of game, a trip for the purpose of hunting or fishing is an instance of participation—an instance of choosing from one of several competing attractions.<sup>3</sup>

Two statistical techniques were utilized. In order to test the complex nature of hypotheses H.1 and H.2, a two-factor analysis of variance routine was employed. This procedure uses the method of proportionate expected subclass numbers to remove the confounding influences among the independent variables (Snedecor, 1956: 385-387). Hypotheses H.3 and H.4 were tested by using contingency Chi-square analysis. The four hypotheses were tested for each group of sportsmen.

## Results

### *Hunters*

The analysis for each group of sportsmen examines effect of residence during youth on source of introduction to the sport, the influence these variables have on frequency of participation during youth and on current level of participation, and the relationship of participation during youth to current participation.

3. There is undoubtedly a problem involved in asking sportsmen to respond to queries about frequency of past participation. They do not maintain mental records of activities in which they take part; nor do they always accurately recall the extent of their participation. These are problems inherent in any type of survey research, and exaggerated considerably when an individual is asked to reconstruct his participation during childhood. Recognizing these limitations, we collected participation information in two different forms. We asked the respondents to estimate the number of times they had gone hunting or fishing the previous year and, for their childhood, we simply asked for a recollection of whether they participated "frequently," "occasionally," or "not at all." The forms in which the participation data were collected influenced the types of data analysis that were applicable.

Hypotheses H.1 and H.2, which dealt with the relationship of the three independent variables (participation in youth, residence in youth, and source of introduction) to the dependent variable, were tested by the analysis of variance technique discussed above. The results are reported in Tables 1 and 2.

TABLE 1

RELATIONSHIP BETWEEN RESIDENCE IN YOUTH AND HUNTING PARTICIPATION IN YOUTH ON CURRENT LEVEL OF HUNTING PARTICIPATION

| PARTICIPATION IN YOUTH | HUNTERS            |     |                   |                              |                   |     |
|------------------------|--------------------|-----|-------------------|------------------------------|-------------------|-----|
|                        | RESIDENCE IN YOUTH |     |                   |                              |                   |     |
|                        | RURAL              |     | NONRURAL          |                              | TOTAL             |     |
|                        | Mean <sup>a</sup>  | No. | Mean <sup>a</sup> | No.                          | Mean <sup>a</sup> | No. |
| Frequent               | 19.3               | 293 | 20.2              | 74                           | 19.6              | 367 |
| Occasional             | 15.8               | 115 | 11.2              | 56                           | 14.4              | 171 |
| None                   | 9.2                | 43  | 12.0              | 68                           | 10.1              | 111 |
| Total                  | 16.7               | 451 | 16.4              | 198                          |                   |     |
| Residence in Youth     | $F = .02$ n.s.     |     |                   | (df = 1 and 643)             |                   |     |
| Participation in Youth | $F = 7.99^{**}$    |     |                   | $r_i = .06$ (df = 2 and 643) |                   |     |
| Interaction            | $F = .92$ n.s.     |     |                   | (df = 2 and 643)             |                   |     |

<sup>a</sup> hunting participation score

n.s. not significant at 0.5 level

\*\* significant at .01 level

TABLE 2

RELATIONSHIP BETWEEN SOURCE OF INTRODUCTION AND HUNTING PARTICIPATION IN YOUTH ON CURRENT LEVEL OF HUNTING PARTICIPATION

| SOURCE OF INTRODUCTION | PARTICIPATION IN YOUTH |     |                   |     |                   |     |                   |     |
|------------------------|------------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|
|                        | FREQUENT               |     | OCCASIONAL        |     | NONE              |     | TOTAL             |     |
|                        | Mean <sup>a</sup>      | No. | Mean <sup>a</sup> | No. | Mean <sup>a</sup> | No. | Mean <sup>a</sup> | No. |
| Parents                | 19.1                   | 203 | 14.5              | 75  | 11.0              | 10  | 14.7              | 288 |
| Other relatives        | 24.4                   | 43  | 14.3              | 32  | 11.5              | 26  | 17.2              | 101 |
| Friends                | 16.5                   | 28  | 14.5              | 29  | 10.5              | 45  | 13.9              | 102 |
| No one                 | 18.3                   | 45  | 14.6              | 16  | 13.4              | 13  | 14.7              | 74  |
| Combination            | 21.4                   | 36  | 15.2              | 16  | 7.0               | 3   | 16.3              | 55  |
| Spouse                 | 14.0                   | 2   | —                 | —   | 12.2              | 13  | 15.0              | 15  |
| Total                  | 19.8                   | 357 | 14.6              | 168 | 11.5              | 110 |                   |     |
| Participation in Youth | $F = 5.64^{**}$        |     |                   |     | $r_i = .11$       |     | (df = 2 and 627)  |     |
| Source of introduction | $F = .27$ n.s.         |     |                   |     |                   |     | (df = 5 and 627)  |     |
| Interaction            | $F = .20$ n.s.         |     |                   |     |                   |     | (df = 10 and 627) |     |

<sup>a</sup> hunting participation score

n.s. not significant at .05 level

\*\* significant at .01 level



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Without undue elaboration it can be seen in the tables that participation in youth was directly related to current level of participation, even when the effects of residence in youth (Table 1) and source of introduction (Table 2) were controlled. In both tables, frequent hunting participation as a youth was associated with high levels of adult participation. For example, controlling on residence in youth, those who reported they hunted frequently as a youth had a current participation score of 19.6, whereas those who reported they had not participated at all during their childhood had a participation score of 10.1 (Table 1). Similar results are found in Table 2 where source of introduction to hunting is controlled. In neither analysis did residence in youth or source of introduction produce a significant relationship when related to current participation. In short, H.1 is rejected and H.2 accepted.

Hypotheses H.3 and H.4 were tested by means of contingency analysis. The results are reported in the upper portions of Tables 3, 4, and 5. Both resi-

TABLE 3  
RELATIONSHIP BETWEEN RESIDENCE IN YOUTH AND PARTICIPATION DURING YOUTH  
FOR HUNTERS AND FISHERMEN<sup>a</sup>

| HUNTERS                |       |       |          |         |       |       |
|------------------------|-------|-------|----------|---------|-------|-------|
| RESIDENCE IN YOUTH     |       |       |          |         |       |       |
| PARTICIPATION IN YOUTH | RURAL |       | NONRURAL |         | TOTAL |       |
|                        | No.   | %     | No.      | %       | No.   | %     |
| Frequent               | 293   | 65.0  | 74       | 37.4    | 367   | 56.5  |
| Occasional             | 115   | 25.5  | 56       | 28.3    | 171   | 26.4  |
| Never                  | 43    | 9.5   | 68       | 34.3    | 111   | 17.1  |
| Total                  | 451   | 100.0 | 198      | 100.0   | 649   | 100.0 |
| Chi-square = 68.45***  |       |       |          | V = .11 |       |       |
| <hr/>                  |       |       |          |         |       |       |
| FISHERMEN              |       |       |          |         |       |       |
| RESIDENCE IN YOUTH     |       |       |          |         |       |       |
| PARTICIPATION IN YOUTH | RURAL |       | NONRURAL |         | TOTAL |       |
|                        | No.   | %     | No.      | %       | No.   | %     |
| Frequent               | 187   | 64.3  | 76       | 47.5    | 263   | 58.3  |
| Occasional             | 91    | 31.3  | 60       | 37.5    | 151   | 33.5  |
| Never                  | 13    | 4.4   | 24       | 15.0    | 37    | 8.2   |
| Total                  | 291   | 100.0 | 160      | 100.0   | 451   | 100.0 |
| Chi-square = 20.13**   |       |       |          | V = .04 |       |       |

<sup>a</sup> Questions used to examine these relationships were asked of all respondents, regardless of the license they held. When the total sample was analyzed as a unit, the same results as in the present table emerged for both hunters and fishermen.

\*\* significant at .01 level.

\*\*\* significant at .001 level.

TABLE 4  
RELATIONSHIP BETWEEN SOURCE OF INTRODUCTION TO SPORTS AND PARTICIPATION DURING YOUTH FOR HUNTERS AND FISHERMEN

| HUNTERS                        |          |      |            |      |       |      |       |       |
|--------------------------------|----------|------|------------|------|-------|------|-------|-------|
| HUNTING PARTICIPATION IN YOUTH |          |      |            |      |       |      |       |       |
| SOURCE OF INTRODUCTION         | FREQUENT |      | OCCASIONAL |      | NEVER |      | TOTAL |       |
|                                | No.      | %    | No.        | %    | No.   | %    | No.   | %     |
| Parents                        | 203      | 70.5 | 75         | 26.0 | 10    | 3.5  | 288   | 100.0 |
| Other relatives                | 43       | 42.6 | 32         | 31.7 | 26    | 25.7 | 101   | 100.0 |
| Friends                        | 28       | 27.5 | 29         | 28.4 | 45    | 44.1 | 102   | 100.0 |
| No one                         | 45       | 60.8 | 16         | 21.6 | 13    | 17.6 | 74    | 100.0 |
| Combination                    | 36       | 65.5 | 16         | 29.1 | 3     | 5.4  | 55    | 100.0 |
| Spouse                         | 2        | 13.3 | 0          | 00.0 | 13    | 86.7 | 15    | 100.0 |
| Total                          | 357      | 56.2 | 168        | 26.5 | 110   | 17.3 | 635   |       |
| Chi-square = 165.72** V = .13  |          |      |            |      |       |      |       |       |
| FISHERMEN                      |          |      |            |      |       |      |       |       |
| FISHING PARTICIPATION IN YOUTH |          |      |            |      |       |      |       |       |
| SOURCE OF INTRODUCTION         | FREQUENT |      | OCCASIONAL |      | NEVER |      | TOTAL |       |
|                                | No.      | %    | No.        | %    | No.   | %    | No.   | %     |
| Parents                        | 121      | 73.3 | 44         | 26.7 | 0     | 00.0 | 165   | 100.0 |
| Other relatives                | 24       | 42.9 | 21         | 37.5 | 11    | 19.6 | 56    | 100.0 |
| Friends                        | 43       | 44.3 | 42         | 43.3 | 12    | 12.4 | 97    | 100.0 |
| No one                         | 42       | 61.8 | 20         | 29.4 | 6     | 8.8  | 68    | 100.0 |
| Combination                    | 29       | 63.0 | 16         | 34.8 | 1     | 2.2  | 46    | 100.0 |
| Spouse                         | 1        | 11.1 | 3          | 33.3 | 5     | 55.6 | 9     | 100.0 |
| Total                          | 260      | 59.0 | 146        | 33.1 | 35    | 7.9  | 441   |       |
| Chi-square = 74.00*** V = .08  |          |      |            |      |       |      |       |       |

\*\*\* significant at .001 level

dence during youth (Table 3) and source of introduction (Table 4) were significantly related to extent of participation during youth, and place of residence during youth was significantly related to source of introduction (Table 5). Descriptively, those from rural areas and those who had been introduced by their parents tended to participate more frequently as youths than those from nonrural areas or those introduced by other sources. Furthermore, those from rural areas were much more likely to have been introduced to hunting by their parents. More than half of those indicating they spent their youth in a rural area reported they were introduced to hunting by their parents (52.8 percent; see Table 5). On the basis of present data, hypothesis H.3 and hypothesis H.4 were accepted.

On the basis of the above analyses we would revise the model shown in Figure 1 by omitting the  $X_1 \rightarrow Y$  (residence during youth-adult participation) and  $X_2 \rightarrow Y$  (source of introduction-adult participation) relationships. The  $X_1 \rightarrow X_2$ ,  $X_1 \rightarrow X_3$ ,  $X_2 \rightarrow X_3$  and  $X_3 \rightarrow Y$  relationships have been substantiated by the present data.

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TABLE 5

RELATIONSHIP BETWEEN RESIDENCE IN YOUTH AND SOURCE OF INTRODUCTION TO SPORTS FOR HUNTERS AND FISHERMEN

| SOURCE OF INTRODUCTION | HUNTERS               |       |          |         |       |       |
|------------------------|-----------------------|-------|----------|---------|-------|-------|
|                        | RESIDENCE IN YOUTH    |       |          |         |       |       |
|                        | RURAL                 |       | NONRURAL |         | TOTAL |       |
|                        | No.                   | %     | No.      | %       | No.   | %     |
| Parents                | 233                   | 52.8  | 59       | 29.9    | 292   | 45.8  |
| Other relatives        | 62                    | 14.1  | 39       | 19.8    | 101   | 15.8  |
| Friends                | 55                    | 12.5  | 46       | 23.4    | 101   | 15.8  |
| No one                 | 48                    | 10.9  | 26       | 13.2    | 74    | 11.6  |
| Combination            | 38                    | 8.6   | 17       | 8.6     | 55    | 8.6   |
| Spouse                 | 5                     | 1.1   | 10       | 5.1     | 15    | 2.4   |
| Total                  | 441                   | 100.0 | 197      | 100.0   | 638   | 100.0 |
|                        | Chi-square = 38.22*** |       |          | V = .06 |       |       |

| SOURCE OF INTRODUCTION | FISHERMEN            |       |          |         |       |       |
|------------------------|----------------------|-------|----------|---------|-------|-------|
|                        | RESIDENCE IN YOUTH   |       |          |         |       |       |
|                        | RURAL                |       | NONRURAL |         | TOTAL |       |
|                        | No.                  | %     | No.      | %       | No.   | %     |
| Parents                | 118                  | 41.3  | 47       | 30.5    | 165   | 37.5  |
| Other relatives        | 32                   | 11.2  | 24       | 15.6    | 56    | 12.7  |
| Friends                | 56                   | 19.6  | 40       | 26.0    | 96    | 21.8  |
| No one                 | 44                   | 15.4  | 24       | 15.6    | 68    | 15.5  |
| Combination            | 34                   | 11.9  | 12       | 7.8     | 46    | 10.5  |
| Spouse                 | 2                    | 0.6   | 7        | 4.5     | 9     | 2.0   |
| Total                  | 286                  | 100.0 | 154      | 100.0   | 440   | 100.0 |
|                        | Chi-square = 15.32** |       |          | V = .03 |       |       |

\*\* significant at .01 level

\*\*\* significant at .001 level

*Fishermen*

With the exception of the relationship between participation during youth and adult level of participation, the results for the fisherman sample were similar to those found for the hunters. Analyses to test the hypotheses for the fisherman sample are contained in the lower portions of Tables 3, 4 and 5 and in Tables 6 and 7. Residence during youth was shown to be significantly related to extent of participation during youth (Table 3); source of introduction was significantly related to fishing participation during youth (Table 4) and to residence in youth (Table 5). There was a relatively weak relationship between participation in youth and adult level of participation, when compared with



the hunters. The relationship, while significant when residence in youth was held constant (Table 6), disappeared when source of introduction to the sport was controlled (Table 7). Thus, for the fishermen, hypotheses H.3 and H.4 were accepted; hypothesis H.2 was tentatively accepted; hypothesis H.1 was rejected.

TABLE 6

RELATIONSHIP BETWEEN RESIDENCE IN YOUTH AND FISHING PARTICIPATION IN YOUTH ON CURRENT LEVEL OF FISHING PARTICIPATION

| PARTICIPATION IN YOUTH | RESIDENCE IN YOUTH       |     |                   |     | TOTAL             |     |
|------------------------|--------------------------|-----|-------------------|-----|-------------------|-----|
|                        | RURAL                    |     | NONRURAL          |     |                   |     |
|                        | Mean <sup>a</sup>        | No. | Mean <sup>a</sup> | No. | Mean <sup>a</sup> | No. |
| Frequent               | 31.2                     | 187 | 33.7              | 76  | 32.1              | 263 |
| Occasional             | 17.6                     | 91  | 31.8              | 60  | 22.6              | 151 |
| None                   | 16.5                     | 13  | 27.8              | 24  | 20.5              | 37  |
| Total                  | 25.5                     | 291 | 32.6              | 160 |                   |     |
| Residence in youth     | $F = 3.00$ n.s.          |     |                   |     | (df = 1 and 445)  |     |
| Participation in youth | $F = 3.12^*$ $r_i = .03$ |     |                   |     | (df = 2 and 445)  |     |
| Interaction            | $F = .93$ n.s.           |     |                   |     | (df = 2 and 445)  |     |

<sup>a</sup> Mean fishing participation score

n.s. not significant at .05 level

\* significant at .05 level

TABLE 7

RELATIONSHIP BETWEEN SOURCE OF INTRODUCTION AND FISHING PARTICIPATION IN YOUTH ON CURRENT LEVEL OF FISHING PARTICIPATION

| SOURCE OF INTRODUCTION | PARTICIPATION IN YOUTH |     |                   |     |                   |     |                   |     |
|------------------------|------------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|
|                        | FREQUENT               |     | OCCASIONAL        |     | NONE              |     | TOTAL             |     |
|                        | Mean <sup>a</sup>      | No. | Mean <sup>a</sup> | No. | Mean <sup>a</sup> | No. | Mean <sup>a</sup> | No. |
| Parents                | 31.1                   | 121 | 26.7              | 44  | —                 | —   | 27.0              | 166 |
| Other relatives        | 31.4                   | 24  | 25.2              | 21  | 23.1              | 11  | 26.8              | 56  |
| Friends                | 25.0                   | 43  | 21.9              | 42  | 26.7              | 12  | 23.2              | 97  |
| No one                 | 27.8                   | 42  | 21.6              | 20  | 23.8              | 6   | 29.7              | 68  |
| Combination            | 42.1                   | 29  | 16.1              | 16  | 3.0               | 1   | 30.1              | 46  |
| Spouse                 | 0.0                    | 1   | 43.0              | 3   | 32.4              | 5   | 33.9              | 9   |
| Total                  | 33.6                   | 260 | 25.3              | 146 | 26.5              | 35  |                   |     |
| Participation in Youth | $F = 1.92$ n.s.        |     |                   |     | (df = 2 and 433)  |     |                   |     |
| Source of Introduction | $F = .33$ n.s.         |     |                   |     | (df = 5 and 433)  |     |                   |     |
| Interaction            | $F = .44$ n.s.         |     |                   |     | (df = 10 and 433) |     |                   |     |

<sup>a</sup> mean fishing participation score

n.s. not significant at .05 level

In terms of the model in Figure 1, the  $X_1 \rightarrow Y$  and  $X_2 \rightarrow Y$  relationships lack empirical support and the  $X_3 \rightarrow Y$  relationship is, at best, weakly supported. The remaining relationships have been substantiated by the present data.

On the basis of the above analyses, a revised model showing the significant interrelationship among all four of our variables would assume the form shown in Figure 2. It should be pointed out, however, that for the fishermen the linkage between participation in youth and current participation is regarded as tentative.

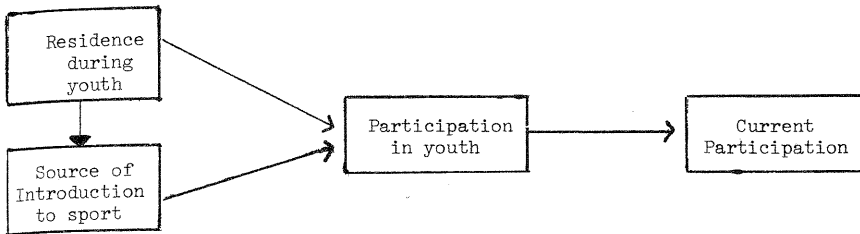


FIGURE 2. SIGNIFICANT INTERRELATIONSHIP AMONG BACKGROUND FACTORS AND CURRENT LEVELS OF PARTICIPATION.

One additional comment concerning the analysis should also be made here. While the measures of association between the variables are not overwhelming in terms of their magnitude, we feel the overall consistent nature of the results, particularly in terms of the direction they take, gives credibility to the model offered above (Figure 2).

### Discussion and Implications

The analyses produced both expected and unexpected results. It was expected that both residence in youth and source of introduction to hunting and fishing would be related to extent of participation during youth, and they were. Youths with rural backgrounds were more likely to participate frequently in hunting and fishing during youth than were those with nonrural backgrounds, suggesting that accessibility to game areas (one can argue that rural residence is probably more conducive to hunting and fishing, which are essentially rural-based sports) serves as an inducement to participation during youth.

The importance of parental introduction to hunting and fishing participation during youth was also noted. For both sports, those who participated frequently, or even occasionally, during youth tended to be introduced to the sports by their parents. However, friends were the single more important source of introduction to both activities for both the hunters and fishermen who did not hunt or fish at all as youths.

It also was expected that frequent participation during youth would be related to high current levels of participation. It seemed likely that those who participated frequently in hunting or fishing during their formative years would be predisposed toward more frequent participation as adults. The data supported this expectation.

Contrary to expectations, there were nonsignificant relationships between residence in youth and source of introduction and current level of participation. How one is introduced to a sport and his residence during youth apparently have little direct influence on one's current level of participation. Both source of introduction and residence during youth were strongly related to participation during youth but, apparently, in the time lapse between youth and adulthood, intervening variables entered which served to negate any influence these early factors might have had on adult participation.

As an example of what is meant by an intervening variable, consider the problem of access to hunting or fishing sites for a nonrural youth. It has been suggested that generally a nonrural youth tends to participate less than a rural youth. However, as he matures to adulthood, the problem of access is reduced, if for no other reason than he is then able to drive a car and consequently may have nearly equal access to hunting and fishing areas when compared to an individual who grew up in a rural area. Likewise, the rural youth may now live in an urban area and, correspondingly, find the availability of hunting and fishing facilities diminished. Variables which were significantly related to youth participation may recede in importance in adult life where factors such as work conditions, income, free time, and access intervene and take precedence.

In another report using the present data, it was shown that of the various nonbackground factors related to current level of hunting and fishing participation, time-related variables such as hours worked per day and days of the week off emerged as most important (Sofranko and Nolan, 1970). For both sports, a direct relationship was found between number of hours worked daily and level of participation; and, for the hunters, level of participation was significantly related to the number of days of week off (Sofranko and Nolan, 1970: 15-17). We view these as being potential intervening variables which act in much the same manner as those discussed in the above paragraph. Evidently, the availability of time is as important to understanding levels of hunting and fishing participation as is knowledge of an individual's background.

While residence in youth is an important predictor of participation as an adult, other factors become more important than the mere fact of residence. This can be tested by hypothesizing that: (1) those with favorable working conditions (paid vacation, short work week, etc.) who grew up in rural areas, have a higher rate of participation than those who also had favorable working conditions but grew up in a nonrural area, and (2) those with unfavorable working conditions who grew up in rural areas have a higher rate of participation than those who also have unfavorable working conditions but grew up in a nonrural area.

Here one would be controlling on the current favorableness of working conditions and examining the effect of childhood residence on level of participation as an adult. Much the same sort of logic could be extended to the variable "source of introduction" in terms of examining possible intervening factors influencing its effects on current level of participation.

These comments are suggestions for future research efforts to account for differential rates of recreation participation. For the present, however, our

findings suggest that adult participation is influenced largely by frequency of participation during youth, and by residence during youth and source of introduction, only insofar as they facilitate participation during youth. Considering that many of the sportsmen in the sample spent their youth in rural areas, were introduced to the sports by parents, and participated frequently during their childhood years, and that American society is becoming highly urbanized, we can suggest that in the future, youths will have fewer opportunities to participate in hunting and fishing activities. One consequence of this may be a general proportional decline in participation in these activities among adults. In the event that work situations become more amenable to increased participation, we would suggest a decreased importance of background influences.

We have tried to operationalize several commonly cited childhood antecedents to determine the carry-over effect they might have on adult sports behavior. Our approach points up the need for an extension of the present analysis to other types of outdoor recreation, and our findings seem to suggest that further research on participation ought to be oriented around the notions of direct and indirect effects and of intervening influences.

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